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31. (New) The golf ball according to claim 30, wherein said polybutadiene has a molecular weight of from about 100,000 to about 500,000.

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~~32. (New) The golf ball according to claim 29, wherein at least one layer of said multi-layer core comprises from about 1 to about 25 parts by weight a metallic salt of a fatty acid based on about 100 parts by weight of an elastomer.~~

33. (New) The golf ball according to claim 28, wherein at least one layer of said multi-layer core comprises from about 0.5 to about 10 parts by weight of a free radical initiator.

34. (New) The golf ball according to claim 28, wherein said multi-layer core has a diameter of from about 1 to about 1.5 inches.

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~~35. (New) The golf ball according to claim 35, wherein said multi-layer core has a diameter of from 1.0625 to 1.42 inches.~~

36. (New) The golf ball according to claim 28, wherein said multi-layer core has a weight of from about 15 grams to about 36 grams.

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~~37. (New) The golf ball according to claim 37, wherein said multi-layer core has a weight of from about 16.5 grams to about 30 grams.~~

38. (New) The golf ball according to claim 28, wherein at least one layer of said multi-layer core comprises a metallocene catalyzed polyolefin.

39. (New) The golf ball according to claim 28, wherein at least one layer of said multi-layer core comprises a polybutadiene and an unsaturated carboxylic acid co-crosslinking agent crosslinked to said polybutadiene.

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40. (New) The golf ball according to claim 28, wherein said multi-layer cover comprises an ionomer.

41. (New) The golf ball according to claim 28, wherein at least one layer of said multi-layer core is sulfur-cured.

42. (New) The golf ball according to claim 28, wherein at least one layer of said multi-layer core is peroxide-cured.

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43. (New) The golf ball according to claim 43, wherein said peroxide is at least one member selected from the group consisting of dicumyl peroxide, n-butyl 4,4'-bis (butylperoxy) valerate, 1,1-bis(t-butylperoxy)-3,3,5-trimethyl cyclohexane, di-t-butyl peroxide and 2,5-di-(t-butylperoxy)-2,5 dimethyl hexane.

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44. (New) The golf ball according to claim 28, wherein said multi-layer core further includes an intermediate core layer disposed between said inner core layer and said outer core layer.

45. (New) The golf ball according to claim 28, wherein at least one of said inner core layer and said outer core layer comprises a polypropylene powder resin.

46. (New) The golf ball according to claim 28, wherein at least one of said inner core layer and said outer core layer comprises a filler.

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47. (New) The golf ball according to claim 47, wherein said filler is a particulate material having a mesh size of less than about 30 U.S. standard size.

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48. (New) The golf ball according to claim 47, wherein said filler is a particulate material having a mesh size of less than about 100 U.S. standard size.

49. (New) The golf ball according to claim 28, wherein said multi-layer core has a PGA compression of about 85 or less.

(50) (New) The golf ball according to claim 28, wherein the difference between the coefficient of restitution of said multi-layer core and the coefficient of restitution of said golf ball is at least about 0.025.

51. (New) The golf ball according to claim 28, wherein said multi-layer cover includes an inner cover layer disposed about said multi-layer core and an outer cover layer disposed about said inner cover layer, each of said inner cover layer and said outer cover layer having a Shore D hardness of from about 60 to about 80.

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52. (New) The golf ball according to claim 52, wherein the difference between the Shore D hardness of said inner cover layer and the Shore D hardness of said outer cover layer is no more than 5.

53. (New) The golf ball of claim 28, wherein said multi-layer cover has an overall cover thickness of at least 3.8 mm (0.150 inches).

54. (New) The golf ball according to claim 28, wherein said golf ball further comprises a thread rubber wound about the outer surface of said multi-layer core.

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55. (New) The golf ball according to claim 55, wherein said thread rubber comprises at least one member selected from the group consisting of natural rubber and polyisoprene rubber.

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56. (New) The golf ball according to claim 55, wherein said thread rubber has a specific gravity of from about 0.9 to about 1.1.

57. (New) The golf ball according to claim 55, wherein said thread rubber has a width of from about 0.047 inches to about 0.094 inches.

58. (New) The golf ball according to claim 55, wherein said thread rubber has a gage of from about 0.012 to about 0.026.

59. (New) The golf ball according to claim 55, wherein the diameter of said multi-layer core and said thread rubber is from about 1.52 inches to about 1.63 inches.

60. (New) The golf ball according to claim 55, wherein the weight of said multi-layer core and said thread rubber is from about 33 grams to about 44 grams.

61. (New) The golf ball according to claim 55, wherein the weight of said multi-layer core and said thread rubber is from 35 grams to 39 grams.

62. (New) A golf ball, comprising:

a multi-layer core having a coefficient of restitution of at least about 0.650 and comprising an inner core layer and an outer core layer disposed about said inner core layer, at least one core layer having at least one member selected from the group consisting of polybutadiene and natural rubber; and

a multi-layer cover disposed about said multi-layer core, said multi-layer cover comprising an ionomer and having a thickness of at least about 3.8 mm (0.150 inches) and a Shore D hardness of at least about 60, said golf ball having a coefficient of restitution of at least about 0.770.

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63. (New) The golf ball according to claim 63, wherein said polybutadiene comprises a molecular weight of from about 50,000 to about 500,000.

64. (New) The golf ball according to claim 64, wherein said polybutadiene comprises a molecular weight of from about 100,000 to about 500,000.

65. (New) The golf ball according to claim 63, wherein at least one layer of said multi-layer core comprises from about 1 to about 25 parts by weight a metallic salt of a fatty acid based on about 100 parts by weight of an elastomer.

66. (New) The golf ball according to claim 63, wherein at least one layer of said multi-layer core comprises from about 0.5 to about 10 parts by weight of a free radical initiator.

67. (New) The golf ball according to claim 63, wherein said multi-layer core has a diameter of from about 1 to about 1.5 inches.

68. (New) The golf ball according to claim 69, wherein said multi-layer core has a diameter of from 1.0625 to 1.42 inches.

69. (New) The golf ball according to claim 63, wherein said multi-layer core has a weight of from about 15 grams to about 36 grams.

70. (New) The golf ball according to claim 71, wherein said multi-layer core has a weight of from 16.5 grams to 30 grams.

71. (New) The golf ball according to claim 63, wherein at least one layer of said multi-layer core comprises a metallocene catalyzed polyolefin.

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72. (New) The golf ball according to claim 63, wherein at least one layer of said multi-layer core comprises polybutadiene and an unsaturated carboxylic acid co-crosslinking agent crosslinked to said polybutadiene.

73. (New) The golf ball according to claim 63, wherein at least one layer of said multi-layer golf ball is sulfur-cured.

74. (New) The golf ball according to claim 63, wherein at least one layer of said multi-layer golf ball is peroxide-cured.

75. (New) The golf ball according to claim 76, wherein said peroxide is at least one member selected from the group consisting of dicumyl peroxide, n-butyl 4,4'-bis (butylperoxy) valerate, 1,1-bis(t-butylperoxy)-3,3,5-trimethyl cyclohexane, di-t-butyl peroxide and 2,5-di-(t-butylperoxy)-2,5 dimethyl hexane.

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76. (New) The golf ball according to claim 63, wherein said multi-layer core exhibits a PGA compression of less than 85.

77. (New) The golf ball according to claim 63, wherein at least one of said inner core layer and outer core layer comprises a polypropylene powder resin.

78. (New) The golf ball according to claim 63, wherein at least one of said inner core layer and said outer core layer comprises a filler.

79. (New) The golf ball according to claim 80, wherein said filler is a particulate material having a mesh size of less than about 30 U.S. standard size.

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80. (New) The golf ball according to claim 80, wherein said filler is a particulate material having a mesh size of less than about 100 U.S. standard size.

81. (New) The golf ball according to claim 63, wherein said multi-layer core further comprises an intermediate core layer disposed between said inner core layer and said outer core layer.

82. (New) The golf ball according to claim 63, wherein said golf ball further comprises a thread rubber wound about the outer surface of said multi-layer core.

83. (New) The golf ball according to claim 84, wherein said thread rubber comprises at least one member selected from the group consisting of natural rubber and polyisoprene rubber.

84. (New) The golf ball according to claim 84, wherein said thread rubber has a specific gravity of from about 0.9 to about 1.1.

85. (New) The golf ball according to claim 84, wherein said thread rubber has a width of from about 0.047 inches to about 0.094 inches.

86. (New) The golf ball according to claim 84, wherein said thread rubber has a gage of from about 0.012 to about 0.026.

87. (New) The golf ball according to claim 84, wherein the diameter of said multi-layer core and said thread rubber is from about 1.52 inches to about 1.63 inches.

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88. (New) The golf ball according to claim 84, wherein the weight of said multi-layer core and said thread rubber is from about 33 grams to about 44 grams.

89. (New) The golf ball according to claim 90, wherein the weight of said multi-layer core and said thread rubber is from 35 grams to 39 grams.

90. (New) A golf ball comprising:

a multi-layer core comprising an inner core layer and an outer core layer disposed about said inner core layer; and

a multi-layer cover having a thickness of at least about 3.8 mm (0.150 inches) and a Shore D hardness of at least about 60, said multi-layer cover comprising a first cover layer disposed about said multi-layer core and a second cover layer disposed about said first cover layer, said first cover layer including a first resin composition and said second cover layer including a second resin composition, wherein at least one of said first resin composition and said second resin composition comprises an ionomer resin; and said golf ball having a coefficient of restitution of at least 0.770.

91. (New) The golf ball according to claim 92, wherein at least one layer of said multi-layer core comprises at least one member selected from the group consisting of natural rubber and polybutadiene.

92. (New) The golf ball according to claim 93, wherein said polybutadiene comprises a molecular weight of from about 50,000 to about 500,000.

93. (New) The golf ball according to claim 94, wherein said polybutadiene comprises a molecular weight of from about 100,000 to about 500,000.

94. (New) The golf ball according to claim 92, wherein at least one layer of said multi-layer core comprises from about 1 to about 25 parts by weight



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a metallic salt of a fatty acid based on about 100 parts by weight of an elastomer.

95. (New) The golf ball according to claim 92, wherein at least one layer of said multi-layer core comprises from about 0.5 to about 10 parts by weight of a free radical initiator.

96. (New) The golf ball according to claim 92, wherein said multi-layer core has a diameter of from about 1 to about 1.5 inches.

97. (New) The golf ball according to claim 99, wherein said multi-layer core has a diameter of from about 1.0625 to about 1.42 inches.

98. (New) The golf ball according to claim 92, wherein said multi-layer core has a weight of from about 15 grams to about 36 grams.

99. (New) The golf ball according to claim 101, wherein said multi-layer core has a weight of from 16.5 grams to 30 grams.

100. (New) The golf ball according to claim 92, wherein at least one layer of said multi-layer core comprises a metallocene catalyzed polyolefin.

101. (New) The golf ball according to claim 92, wherein at least one layer of said multi-layer core comprises a polybutadiene and an unsaturated carboxylic acid co-crosslinking agent crosslinked to said polybutadiene.

102. (New) The golf ball according to claim 92, wherein at least one layer of said multi-layer core is sulfur-cured.

103. (New) The golf ball according to claim 92, wherein at least one layer of said multi-layer core is peroxide-cured.

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104. (New) The golf ball according to claim 106, wherein said peroxide is at least one member selected from the group consisting of dicumyl peroxide, n-butyl 4,4'-bis (butylperoxy) valerate, 1,1-bis(t-butylperoxy)-3,3,5-trimethyl cyclohexane, di-t-butyl peroxide and 2,5-di-(t-butylperoxy)-2,5 dimethyl hexane.

105. (New) The golf ball according to claim 92, wherein at least one of said inner core layer and said outer core layer comprises a polypropylene powder resin.

106. (New) The golf ball according to claim 92, wherein at least one of said inner core layer and outer core layer comprises a filler.

107. (New) The golf ball according to claim 109, wherein said filler is a particulate material having a mesh size of less than about 30 U.S. standard size.

108. (New) The golf ball according to claim 109, wherein said filler is a particulate material having a mesh size of less than about 100 U.S. standard size.

109. (New) The golf ball according to claim 92, wherein said multi-layer core has a PGA compression of about 85 or less.

110. (New) The golf ball according to claim 92, wherein the difference between the coefficient of restitution of said multi-layer core and the coefficient of restitution of said golf ball is at least about 0.025.

111. (New) The golf ball according to claim 92, wherein the difference between the Shore D hardness of said first cover layer and the Shore D hardness of said second cover layer is no more than 5.

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112. (New) The golf ball according to claim 92, wherein said multi-layer core further comprises an intermediate core layer disposed between said inner core layer and said outer core layer.

113. (New) The golf ball according to claim 92, wherein said first resin composition comprises a filler.

114. (New) The golf ball according to claim 116, wherein said filler is a particulate material having a mesh size of less than about 30 U.S. standard size.

115. (New) The golf ball according to claim 116, wherein said filler is a particulate material having a mesh size of less than about 100 U.S. standard size.

116. (New) The golf ball according to claim 92, wherein said golf ball further comprises a thread rubber wound about the outer surface of said multi-layer core.

117. (New) The golf ball according to claim 119, wherein said thread rubber is at least one member selected from the group consisting of natural rubber and polyisoprene rubber.

118. (New) The golf ball according to claim 119, wherein said thread rubber has a specific gravity of from about 0.9 to about 1.1.

119. (New) The golf ball according to claim 119, wherein said thread rubber has a width of from about 0.047 inches to about 0.094 inches.

120. (New) The golf ball according to claim 119, wherein said thread rubber has a gage of from about 0.012 to about 0.026.

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121. (New) The golf ball according to claim 119, wherein the diameter of said multi-layer core and said thread rubber is from about 1.52 inches to about 1.63 inches.

122. (New) The golf ball according to claim 119, wherein the weight of said multi-layer core and said thread rubber is from about 33 grams to about 44 grams.

123. (New) The golf ball according to claim 119, wherein the weight of said multi-layer core and said thread rubber is from about 35 grams to about 39 grams.

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